



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/785,529

02/24/2004

Donald A. Meltzer

202ES048A

1543

37535 7590 04/12/2010  
THE LUBRIZOL CORPORATION  
29400 LAKELAND BLVD  
MAIL DROP 022B  
WICKLIFFE, OH 44092-2298

EXAMINER

SERGEANT, RABON A

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/12/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/785,529	<b>Applicant(s)</b> MELTZER ET AL.	
	<b>Examiner</b> Rabon Sergent	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,7,10,13-39 and 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7,10,13-39 and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1796

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 7, 2010 has been entered.

2. Claims 13-18, 20-22, 24-26, 28-30, and 32-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In view of the amendment incorporating the subject matter of claim 2 into claim 1, it is unclear that property  $V_t$  (criteria F) of claim 13 and property  $V_{ft}$  of claim 16 are further limiting.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1796

4. Claims 1, 3, 4, 6, 7, 10, 13-39, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehrlich et al. ('904) in view of van Der wal et al. ('445) and Mao ('572).

Ehrlich et al. disclose thermoplastic polyurethanes, wherein MDI is reacted with a blend of polyester polyol (b) and polyether polyol (i) and/or (ii), wherein the polyester polyol component and polyether polyol relative amounts meet those claimed, in that at least about 15 percent by weight of the polyester polyol is replaced by the aforementioned polyether polyol, and a chain extender component, wherein the chain extender component comprises straight chain diols, such as those having 2 to 6 carbon atoms, or bis(hydroxyethyl)ethers of hydroquinone and further wherein, in a preferred embodiment, up to 25 equivalent (molar) percent of the chain extender may be branched chain diols, diethylene glycol, or dipropylene glycol. See abstract; column 2, lines 40+; column 3, lines 6-43; columns 4-6; and column 7, lines 1-50, especially column 3, lines 38-43. Applicants' catalyst amount of claim 36 is disclosed at column 7, lines 47-50. Furthermore, patentees disclose the use of extrusion equipment and conventional processes for producing the thermoplastic polyurethane; therefore, applicants' claimed twin screw extruder and processing times (claims 37 and 39) are considered to be encompassed by patentees. Given the disclosed amounts of polyols and chain extenders, applicants' claimed ratio is considered to be met.

5. However, the primary reference is silent regarding the use of polyoxytetramethylene polyols and the use of the thermoplastic polyurethane to produce coated fabrics and conveyor belts. With respect to the issue of the polyoxytetramethylene polyol, van Der wal et al. disclose thermoplastic polyurethanes derived from blends of polyester diols and polyether diols, wherein the respective amounts of the polyester diol and polyether diol satisfy that instantly claimed and

Art Unit: 1796

further wherein a suitable polyether diol is disclosed as being polyoxytetramethylene diol (column 3, lines 67 and 68). While van Der wal et al. disclose such polyols as polyoxypropylene-polyoxyethylene glycol, van Der wal et al. further disclose at column 4, lines 8 and 9 that poly(tetramethylene oxide) diol (polyoxytetramethylene polyol) is the most preferred polyether polyol. Therefore, the secondary reference establishes that the use of applicants' claimed diol within an analogous thermoplastic polyurethane was not only known at the time of invention, its use was preferred. Accordingly, it would have been obvious to incorporate such a polyether diol in the claimed amount into the composition of the primary reference, so as to arrive at the instant invention. With respect to the issue of the production of coated fabrics and conveyor belts, it is noted that both van Der wal et al. and Mao disclose the production of thermoplastic polyurethanes, derived from blends of polyester polyols and polyether polyols, that are considered to be analogous to those of the primary reference, and further that van Der wal et al. disclose the production of conveyor belts and Mao discloses the production of coated fabrics (abstracts). Accordingly, since these applications for analogous thermoplastic polyurethanes were known at the time of invention, the position is taken that it would have been obvious to utilize the thermoplastic polyurethane composition of Ehrlich et al. to produce the instantly claimed coated fabrics and conveyor belts.

6. Applicants' response of January 7, 2010 has been considered; however, it is insufficient to overcome the prior art rejection. Applicants have amended the independent claims to include limitations that were previously present within dependent claims; however, it is noted that these limitations have been previously considered by the examiner. While applicants argue that the disclosure of the primary reference is very broad with respect to the mixture of the polyester and

Art Unit: 1796

polyether polyols, in that, according to applicants, the disclosed mixtures are from 5% to 95% and 95% to 5%, the examiner takes the position that applicants have failed to fully or accurately appreciate the teachings of the reference. The mixtures that applicants refer to pertain to the polymeric diol component, wherein the polymeric diol may be polyether polyol (a), polyester polyol (b), and the argued mixtures of (a) and (b). As such, the reference clearly allows for the sole use of polyester polyol (b) and the replacement of at least about 15 weight percent of the polyester polyol (b) with the polyether polyol (i) and/or (ii). Accordingly, despite applicants' argument, the relied upon mixtures of the relied upon polyester polyol and polyether polyol clearly and significantly overlap that claimed. Though applicants' argument concerning the mixtures of polyols is misplaced, applicants' further argument that the broad teaching within Ehrlich et al. regarding the mixing of polyols does not help solve the problem of the current invention still fails to appreciate the teachings within van Der wal et al. regarding the use of polyester polyol and polyether polyol in amounts that satisfy the claims. Furthermore, despite applicants' criticism of the teachings within Ehrlich et al. concerning the use of the chain extender and the co-chain extender, the fact remains that the reference clearly allows for the preferred use of chain extender species and co-chain extender species in amounts that encompass that claimed. Applicants' argument that the co-chain extender amount may be zero is not well taken, since it is clear that mixtures of the respective extenders are preferentially used which significantly overlap those claimed. The position is taken that applicants have failed to appreciate the specific teachings of the primary reference and the combined teachings of all of the references, and that the evidence of record is adequate to render the instant invention *prima facie* obvious. A *prima facie* case of obviousness having been established, the examiner has

Art Unit: 1796

considered applicants' examples for a showing of unexpected results. However, despite applicants' response, applicants have failed to rebut the *prima facie* case of obviousness by such means as a showing of unexpected results, wherein examples commensurate in scope with the claims have been compared against the closest available art, namely Ehrlich et al. It has been held that the claims must be commensurate in scope with any showing of unexpected results. *In re Greenfield*, 197 USPQ 227. It has further been held that a limited showing of criticality is insufficient to support a broadly claimed range. *In re Lemin*, 161 USPQ 288. With these requirements in mind, applicants' examples of their invention are not commensurate in scope with the claims in terms of reactant species or amounts. Furthermore, it is noted that applicants' comparative examples within the specification fail to be representative of Ehrlich et al., because the exemplified comparative compositions fail to employ Ehrlich et al.'s disclosed polyol and the preferred chain extender blends. Applicants have argued that the control examples are closer to the claimed invention than the prior art cited; however, the examiner cannot agree with this statement for the aforementioned reason.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

/Rabon Sergent/  
Primary Examiner, Art Unit 1796